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## NOTES AND DISCUSSION

### FISHER'S "THE PURCHASING POWER OF MONEY."<sup>1</sup>

The announcement that, by means of careful and exhaustive investigations and computations, involving a wide range of statistical mathematics, authoritative statements have been secured of the volume of trade of the United States, of the velocity of circulation of its bank deposits, and of the volume of its circulating credit; and the further announcement that from these elaborated data and from the money-supply estimates of Professor Kinley, a final computation yields the same level of prices as that obtained by direct returns and simple averages, burst in upon the "dismal science" with the freshness of the news that men have begun to fly. It is comforting to men of science whenever they are satisfied that statistics have been found to confirm a theory. Respect for government bureaus grows. Statistics of prices, money, deposits, and trade prove one another.

What light does the investigation throw on the causes of price fluctuations? The branch of monetary theory involved is most important. Doctors disagree, as was shown last winter at the discussion of the preliminary presentation of the theory to the American Economic Association at St. Louis. The results of the book are summarized as follows (p. 310):

"Except for the growth of  $V$  (velocity of money) prices would have been one per cent lower than they were."

"Except for the growth of  $\frac{M'}{M} \left( \frac{\text{deposits}}{\text{money plus demand notes}} \right)$  prices would have been twenty-three per cent lower than they were."

"Except for the growth of  $V'$  (velocity of deposits) prices would have been twenty-eight per cent lower than they were."

"Except for the growth of  $M$ , prices would have been forty-five per cent lower than they were."

The conclusion is that the growth of money was the largest factor in raising prices.

Why are readers not told what would have been the effect on prices if deposits had not increased? Why is the effect of deposits deadened by that of money? See what happened to deposits (p. 304): "These figures, or the dotted curves in the preceding diagram,<sup>2</sup> show that money in circulation ( $M$ ) has nearly doubled in thirteen years; that its velocity of circulation ( $V$ ) has increased only ten per cent; that the deposit currency has nearly tripled and its velocity of circulation ( $V'$ ) has increased fifty per cent; that the volume of trade has doubled, and that prices have risen two-thirds." The proportion of bank deposits to simple money circulation is as seven to one and a half. And if the composite circulation ( $M$ )

<sup>1</sup>"The Purchasing Power of Money," by Irving Fisher, Professor of Political Economy in Yale University, assisted by Harry G. Brown, Instructor in Political Economy in Yale University. Pp. xxii, 505. Price \$3.00 New York: Macmillan Company, 1911.

<sup>2</sup>This refers to a diagram in Mr. Fisher's book.

be resolved into its fiduciary and monetary constituents, and the former be added to bank deposits, then the fiduciary element is sixteen times the real money (cf. p. 13). But this giant, Deposits, must be subjugated and put back to his proper place! The theory of causality as enounced by Professor Fisher is that a portion of this fiduciary element, the demand notes (quite arbitrary, so far as cause is concerned, for it depends merely on the individual convenience which prefers one form of debt to another), should be separated off from deposits and added to the money, and that then this incongruous summation should be looked upon as the real cause of the remaining and preponderant portion of credit, the deposits; and hence as the real cause of price fluctuation.

The labored statistical work has apparently done little to illuminate the causal inquiry. The conclusion is extra-statistical. At the meeting of the American Economic Association above alluded to, it was suggested that the causal chain might sometimes run from prices to trade or deposits or velocity. Professor Fisher answered that "P is the one passive element of the equation." This was very just. But he went on to say, "Besides the causal relation between M [circulation] and M' [deposits]," etc. The book contains numerous allusions to and affirmations of this causal relation.

Professor Fisher has apparently but followed the common practice of price statisticians, who, in making the direct computation of averages, bunch together money and demand notes. This procedure is permissible from their point of view. A vague contrast is, however, evoked between this repugnant combination, on the one hand, and deposits, on the other, which is fatal to correct reasoning when the combination is sought to be used as a datum for other equations or other reasoning. The excuse for this improper union is always that the immediate object in hand is an "equation of exchange." It is needed for the purpose of testing price statistics. Statisticians accept the popular sense of money in order to attain to its value. They admit and even loudly, at times, affirm that deposits have an effect on prices, but just when or how, is not expressed, or expressed inconsistently. How can the relation be clearly established when deposits are divorced from demand-notes, their allotropic form?

The theorist is alternately convinced that money (of some sort) or that deposits are decisive on the level of prices; but, in the absence of a proper theory to connect the two, feels that he must take the part of one, and generally falls back on vague "money" as the "regulator." If pressed hard on this point, he is apt to say that he really meant metallic money. The book under consideration has done nothing to clear up this ambiguity of money theory. The labors of that penetrating student, Professor Dunbar, in distinguishing the credit from the money spheres of action, find no echo. "The quantity theory, as thus stated, does not claim that while money is increasing in quantity, other causes may not affect M' [deposits], V, V', and the Q's, and thus aggravate or neutralize the effect of M [vague money] on the p's [prices]. But these are not the effects of M on the p's. So far as M by itself is concerned, its effect on the p's is strictly proportional" (p. 158). This statement attributes prices to vague money, M, i.e., money plus demand notes. Compare it with others: "Whether or not prices will continue to rise depends on whether the increase of gold and the

circulating media based on gold continue to exceed the growth of trade. It is the relation of gold to trade that chiefly affects prices" (p. 248). Could anything be more indefinite? The last statement attributes prices to gold. "The increase in M brings about a proportionate increase in M'" (p. 165). "Deposits (M') are chiefly the effect of money, given the normal ratio of M' to M" (p. 183). "We have seen that, normally, deposits rise or fall with money in circulation. Therefore, if deposits had increased just as fast as money and no faster, we should ascribe the whole increase to money alone" (p. 308). The trouble is with the attempt to use the equation for the causal analysis. Asseveration in favor of M, or composite circulation, is balanced by asseveration for money.

Causal theorists should reject demand-notes from the money item and add them to deposits, if the equation is to serve any purpose of causal inquiry. Evidently the connection of demand-notes with coin is only because their rapidity of circulation is assumed to be the same—a circumstance of no importance as bearing on analysis of causes. The fundamentals of money theory are analytic and not quantitative; but the members of the equation of exchange cannot be assumed to possess this character. A theory of causes is evolutionary. It must contrast environment with content and process. Through such contrast alone can explanation be reached. If it is sought to apply this method to the analysis of exchange practices, it is plain that the environmental part of the whole price-stuff is money—real money: it is the fixed condition under which prices are made. The real importance attaching to money is its contrast with credit. To mix it up with some credit and then attribute to this sophisticated "money" a price-causality is an *Unding*. It is only too common to mix money with a part of the credit and then seek to contrast this popular compound with "deposit circulation"—a very happy term, by the way. This mingling of money and credit is made necessary by the actual facts.

Why does not the book tell us what prices would have been if credit had not increased, or even if deposits had not tripled and their velocity had not augmented by one-half? Professor Fisher says in his paper before the American Economic Association (p. 8): "Of the four price-raising causes we find the most important absolutely to be the increase in bank deposits (M'). But if we measure these bank deposits (as they should be measured) relatively to the money in circulation, then their increase is found to be a less important price-raiser than the increase in the quantity of money." In the debate which followed, he referred his colleagues to his book. If, now, we turn to the book, what do we find? P. 154: . . . "The normal ratio which M' bears to M, which we have seen tends to be maintained." P. 150: "At the close of our study, as at the beginning, stands forth the equation of exchange as the great determinant of the purchasing power of money. With its aid we see that normally the quantity of deposit currency varies directly with the quantity of money, and that therefore the introduction of deposits does not disturb the relations we found to hold true before." P. 147: We are told that in the United States, "to meet any modification in other factors of the equation of exchange—such, for instance, as trade—the gold in circulation must bear the burden." To quote the numerous other asseverations that metallic or unmetallic money or

both control the quantity of deposits, would be going too far, but the curious reader is referred to pp. 154, 156, 157, 158, 161, 164, 165, 171, 181, 308, 317, 319, and also citations above for ambiguity as between *M* and money. Take for example p. 319: "Deposits subject to check depend on money in circulation, the two normally varying in unison."

We have been repeatedly promised proof of the causal relation, in which "money" or money determines the amount of credit. The statement has been reiterated. The only attempt at proof is found on pp. 50, 51: "Two facts normally give deposits a more or less definite ratio to money. The first has been already explained, viz., that bank reserves are kept in a more or less definite ratio to bank deposits. The second is that individuals, firms, and corporations preserve more or less definite ratio between their cash transactions and their check transactions, and also between their money and deposit balances." This is the proof adduced of the influence of money upon deposits. But the first statement speaks only of the influence of deposits upon money! It had been generally supposed that the ratio of deposits to money was chiefly a partial measure of expansion. But the book imagines a relation between deposits and circulation and connects that loosely with an (inverted) relation between deposits and money. After mangling credit, dividing it by money, and then redividing it by a part of itself, the book would have us believe that the science of mathematics proves that the influence of money on prices is greater than that of credit. Evidently no such result flows from the equation of exchange.

While the general principle that the quantity theory is a metallic theory is stoutly affirmed, the book admits that there are "transition periods" during which credit circulation may exert an influence upon prices. "In a similar way seasonal variations in the price level are reduced by the alternate expansion and contraction of an elastic bank currency. In this case temporarily, and to an extent limited by the amount of legal tender currency, money or deposits or both may be said to adapt themselves to the amount of trade. In these two ways, then, both the rise and fall of prices are mitigated. Therefore, the quantity theory will not hold true strictly and absolutely during transition periods" (p. 161). There is a chapter which deals briefly with transition periods, and states some of the principal incidents of the credit cycle. The term "transition period" is well chosen to complement the essentially static interpretation which is put upon the equation of exchange. If the equation be employed to ascertain more correctly the relative statistics of successive years, as Professor Fisher has done, the results may be made the basis of dynamic reasoning. But he also attributes to the equation an essential virtue, a relation deep down in the nature of things. There may be considerable to say for this view, also; but "figure worship" may be misleading. The unspoken hypothesis is evoked of a normal period during which the equation is regnant in the economic world, broken by convulsions during which it is dethroned and the powers of darkness hold sway. Perhaps moments occur when the equation represents tangible, business figures. If so, they are very rare. The equation is deep and valuable not because it gives concrete results but because it certifies to general, typical proportions. If the test of normality be a concrete correspondence, then practically all periods are exceptional, abnormal, and transitional. An equation

between and among average data presents no concrete correspondence. Why, then, found talk about "exceptional transition periods" upon the equation of exchange?

Names are, abstractly viewed, incidents of little importance, and Professor Fisher's eager championship of the quantity theory, without, however, its inflationist corollaries (p. 15), if taken by itself, may be regarded as a matter of taste. It is, indeed, a little strange that he who, in his works on "Income and Capital," and on "The Rate of Interest," so exaggerated the psychological influences in industry, should turn about and correspondingly exaggerate the materialistic influences that make for the level of prices. It has been seen that "transition" periods are neglected, and it is also plain that their prices cannot be accounted for on a materialistic basis. Professor Fisher is perhaps discouraged from continuing his support for psychological economics by difficulties connected with the principle that credit fluctuations cause international gold movements and consequent equalization of prices throughout the world. The book presents such movements as instantaneous, on the good, old plan of orthodox economics. Adjustments of gold to credit are continually taking place; but it demands a long period of credit expansion to bring about discredit. This qualification, unwelcome to quantity theorists, must be conceded in derogation of their touch-and-go mechanism. In fact, the adjustment is so tardy, and when it takes place goes with such a rush, that they must be perpetually either disappointed or shocked. Of course, he takes the quantity theory in the objective sense: "It is true in the sense that one of the normal effects of an increase in the quantity of money is an exactly proportional increase in the general level of prices" (p. 157). With such convictions, it is apparent that he felt compelled to accept the term.

Authors disagree as to what money affects prices, and how the effect is produced. Professor Laughlin properly groups all credit together—demand-notes and deposits—and thinks that this circulation cannot affect prices normally, since it is dealt out in proportion to business. Professor Fisher thinks that metallic money and credit money should be taken together. Still another possible view is that demand-notes plus deposits—and chiefly the latter—regulate prices in short periods, and together must be contrasted with metallic money, whose chief function is to step in as a substitute for failing credit, and at such moments to play a decisive rôle. The last view lends itself better to evolutionary logic; it has never been sufficiently presented. It is certainly illogical to classify credit-money in the same category with metallic money, except it be understood that, like any two extremes, they may be connected by a differentiated series. Such confusion on the part of economists may be a consequence of intimacy with legislation, which pays little heed to organic structure and processes.

In connection with the effect of credit on prices, the book cites a student of this phase of the subject, Dr. M. T. England (p. 273). Dr. England found that deposits sometimes continue to rise after prices have begun to fall, a circumstance which would seem disfavorable to the view that credit influences prices. The explanation, as discovered by Dr. England, is so favorable to the view that credit is the real influence at work, that a word should be said in expla-

nation. The conclusion is based, not so much on "the revival of trade following a crisis," as on the fact that banking practice, in the returns for "deposits," does not separate those based on commercial loans from those based on speculation, the so-called "Wall Street loans." It is well known that speculation is even more active on a falling than on a rising market, and stock-loans are correspondingly large. These speculative loans overlay, in the bank returns, the commercial, which are all the while shrinking, and which are the basis of those deposits which are directed toward the purchase of commodities. It is abstractly conceivable that deposits or other circulation originating in stock loans, might reach commodities at last, and justify some sort of a credit—quantity theory, if the speculation kept up long enough; but, as a matter of fact, it does not: commodities are purchased with the credit that was meant for that purpose and not with that which was meant for stock-market liquidations. Statistics favor the idea that it is not the whole body of credit but the commercial or the industrial credit that affects commodity prices for short periods; and that such prices fall because loans devoted to commodity purchases have already fallen. The industrial loans are falling while the stock loans are still rising.

The book adopts the usage of the term "price" in the sense of the old term "value," for exchange value in general. It proposes that the latter term ("value") should be used for "total value." But it frequently uses price in its old sense of money-exchange-value.

"Deposit banking is a device by which wealth, incapable of direct circulation, may be made the basis of the circulation of rights to draw" (p. 53). This statement follows the current view that credit is based upon those goods which may be pledged as tangible security. The term "based" is ambiguous. It is true that pledges are pawned for payment of debts; but it is also true that the real basis of an industrial loan is the goods which are expected to be manufactured with the aid of the loan. The credit thus represents, not the present pawned goods, but the future goods,—they are the real basis of the loan. This ambiguity is only too common in works on money, and can only be avoided by the shunning of the materialistic view of the question, altogether.

Economists and legislators will deeply thank Professor Fisher for his statistical labors. The results will soon be disseminated and appropriated for the common good. This book is pervaded by the common sense, the direct diction, and the large desire to assign credit where it is due, which make Professor Fisher's writings so attractive and wholesome.

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